

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. In the claims

As shown in the foregoing LIST OF CURRENT CLAIMS, the claims have been amended to more clearly point out the subject matter for which protection is sought.

Claim 1 is amended to recite that the air stream released from the impeller passes through the volute chambers to be exhausted from an outer periphery of the air guide. It is respectfully submitted that no new matter is added, since support for the amendments is found at least in Figs. 2 through 5 of the pending application and at least on page 10, lines 4-7 of the accompanying description in the specification.

Claims 5, 6, and 23 are amended to provide clarity. It is respectfully submitted that no new matter is added by way of the amendments, since only minor clarifying changes are made.

Claim 26 is amended to clarify that the motor cover surrounds the casing and the motor cover covers the exhaust openings. It is respectfully submitted that no new matter is added, since support for the amendment is found at least in Fig. 12 of the pending application and at least on page 20, lines 3-12 of the accompanying description in the specification.

Claims 8, 10, 12, 13, 15-20, 24 are left unchanged.

Claims 2, 3, 5, 7, 9, 11, 14, 21, 22, 25, and 27-73 remain withdrawn.

Claim 4 remains canceled.

Entry of the LIST OF CURRENT CLAIMS is respectfully requested in the next Office communication.

2. Rejection of claims 1, 6, 8, 10, 12-16, 18-20, 24, and 26 under 35 U.S.C. § 102(b) as being anticipated by EP publication no. 1048258 (*Tarutani et al.*)

Reconsideration of this rejection is respectfully requested, in view of the amendments to the claims, on the basis that the *Tarutani* publication fails to disclose each and every recited element of amended claim 1. The remaining claims depend from claim 1, and are therefore patentable as containing all of the recited elements of claim 1, as well as for their respective recited features.

By way of review, the present embodiment, as defined in amended claim 1, is directed to an electric blower including an electric motor having a stator and a rotor. An impeller is rotated by the electric motor. An air guide having a plurality of guide blades is positioned around the impeller. A casing encloses the impeller and the air guide, wherein the casing is provided with a number of exhaust openings through which a part of an air stream suctioned by the impeller is discharged. A circumferential length of each of the exhaust openings is substantially identical to a circumferential distance between outer peripheral ends of adjacent guide blades. In addition, the bottom surfaces of outer peripheral end portions of volute chambers are located between lower edges and upper edges of the exhaust openings. Each of the volute chambers is an air passageway formed by two neighboring guide blades and an air stream released from the impeller passes through the volute chambers to be exhausted from the outer periphery of the air guide.

Since the bottom surfaces of the outer peripheral end portions of the volute chambers are configured to be located between the lower edges and upper edges of the exhaust openings, the air stream from the impeller is exhausted through the exhaust openings without colliding with the casing. Accordingly, the blowing efficiency of the electric blower of the claimed embodiment can be increased and at the same time noise thereof can be reduced.

Turning to the *Tarutani* publication, an electric blower and a vacuum cleaning device using the same is disclosed. The Office action asserts on pages 2-3 that the space between ribs 72 can be considered a volute chamber according to the claims, since it is

an air passageway formed between two neighboring guide blades. The Office action further asserts that the bottom surface of the outer peripheral end portions of the configuration defined by the ribs 72 are located between the lower and upper edges of the exhaust openings.

In view of the amendments to claim 1, however, the ribs 72 of the *Tarutani* publication cannot meet the structural configuration required by the recitation of the bottom surfaces of the outer peripheral end portions of volute chambers being located between lower edges and upper edges of the exhaust openings, each of the volute chambers being an air passageway formed by two neighboring guide blades, *and* an air stream released from the impeller passing through the volute chambers to be exhausted from the outer periphery of the air guide.

As can be seen in Fig. 6 of the *Tarutani* publication, the ribs 72 direct a remaining airflow into a bracket 55 for cooling a motor drive section 53 (paragraph [0037]). Thus, the guide ribs 72 act to guide the airflow towards an inside of the electric blower, and do not exhaust the airflow from an outer periphery of the air guide, as required by amended claim 1.

While, the volute ribs 71 of the *Tarutani* publication do exhaust airflow from an outer periphery of the diffuser 63, the bottom surfaces of the outer peripheral end portions of volute ribs 71 are not located between lower edges and upper edges of the exhaust openings 65a, as is required by the structure recited in amended claim 1, but are instead located above an upper edge of the exhaust opening 65a.

In view of the above, while the Office action asserts that the guide ribs 72 may be considered the volute chamber recited in amended claim 1, the guide ribs do not exhaust the airflow from an outer periphery of the air guide, as required by the volute chambers recited in amended claim 1.

Additionally, while the volute ribs 71 do exhaust the airflow from an outer periphery of the air guide, the volute ribs 71 do not include the bottom surfaces of the outer peripheral end portions of the volute ribs 71 being located between lower edges

and upper edges of the exhaust openings 65a, as is required by the volute chambers recited in amended claim 1.

Accordingly, the *Tarutani* publication fails to disclose at least the bottom surfaces of the outer peripheral end portions of volute chambers being located between lower edges and upper edges of the exhaust openings, each of the volute chambers being an air passageway formed by two neighboring guide blades, *and* an air stream released from the impeller passing through the volute chambers to be exhausted from the outer periphery of the air guide, all as required by amended claim 1.

Therefore, since the *Tarutani* publication fails to disclose every feature of amended claim 1, withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claim 1 is patentable and therefore, claims 6, 8, 10, 12-16, 18-20, 24, and 26, which depend from claim 1, are also considered to be patentable as containing all of the elements of claim 1, as well as for their respective recited features.

Further, with respect to the electric blower as defined in claim 19, each of the guide blades is located at about a center of a circumferential width of an exhaust opening. By such configuration, high frequency sounds or noises, which tend to be increased when the air streams are directly discharged through first exhaust openings, can be reduced or eliminated.

In contrast, the *Tarutani* publication discloses that the volute ribs 71 are located at side ends of a circumferential width of the exhaust opening 65a (see Fig. 7). Thus, the *Tarutani* publication fails to disclose every feature of pending claim 19.

With regard to the statement in the Office action on page 8 that the position of the guide blades changes as the impeller rotates, the applicants respectfully disagree. While the impeller does rotate, the guide blades (diffuser of the *Tarutani* publication) remain stationary (“A diffuser 64 is fixed to the motor frame 54...” *Tarutani* publication, paragraph [0026]). Accordingly, since the diffuser of the *Tarutani*

publication does not rotate, the position of the guide blades remains the same, and as shown in Fig. 7, the volute ribs 71 are located at side ends of a circumferential width of the exhaust opening 65a.

In addition, the electric blower as defined in claim 20 is featured in that ribs are provided on an outer surface of the casing above the respective exhaust openings. However, as shown in Fig. 27(c), the *Tarutani* publication discloses that the pieces 65p are formed by inwardly bending the edge extending along the perimeter of the exhaust opening 65a. Accordingly, the *Tarutani* publication discloses that the pieces 65p are provided on the inner surface of the fan cover 65, and not on an outer surface of the casing, as required by pending claim 20.

Further still, the electric blower as defined in amended claim 26 is featured in that the electric blower further includes a motor cover surrounding the casing. The motor cover covers the exhaust openings, and is open at a downstream side of the part of the air stream. Since the motor cover disposed surrounding casing serves to prevent dispersion of the air streams discharged from first exhaust openings, the air streams smoothly flow toward the motor unit. Consequently, the volume of the exhausted air streams is increased with their fluidic losses reduced, thereby improving the blowing efficiency.

In contrast, the *Tarutani* publication discloses an electric motor chamber 6 (which was pointed out to correspond to the motor cover of the claimed embodiment on page 5 of the Office action) containing the electric blower 5 therein. However, the *Tarutani* publication does not disclose that the electric motor chamber 6 is open at a downstream side of the part of the air stream. Therefore the electric motor chamber of the *Tarutani* publication is different from the motor cover of the claimed embodiment. Thus, the above described effectiveness of the claimed embodiment cannot be achieved by the device of the *Tarutani* publication.

3. Rejection of claim 17 under 35 U.S.C. § 103(a) as being unpatentable over EP publication no. 1048258 (*Tarutani et al.*)

Reconsideration of this rejection is respectfully requested, in view of the above discussion, on the basis that the proposed modification of the *Tarutani* publication fails to cure the deficiencies of the *Tarutani* publication as discussed above with respect to claim 1, from which claim 17 depends.

Accordingly, a *prima facie* case of obviousness cannot be maintained, and withdrawal of this rejection is respectfully requested.

4. Rejection of claim 23 under 35 U.S.C. § 103(a) as being unpatentable over EP publication no. 1048258 (*Tarutani et al.*) in view of U.S. patent no. 6,166,462 (*Finkenbinder*)

Reconsideration of this rejection is respectfully requested, in view of the above discussion, on the basis that the *Finkenbinder* patent fails to cure the deficiencies of the *Tarutani* publication as discussed above with respect to claim 1, from which claim 23 depends.

Accordingly, a *prima facie* case of obviousness cannot be maintained, and withdrawal of this rejection is respectfully requested.

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Examiner: S. L. Karls
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5. Conclusion

As a result of the amendment to the claims, and further in view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Patrick M. Buechner', with a long horizontal flourish extending to the right.

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